



NIST Combinatorial Methods Center

NCMC-7: Adhesion & Mechanical Properties II

May 2nd & 3rd, 2005 ◇ Bldg. 101 / Employee Lounge

Monday, May 2nd, 2005 - Morning

8:00 am Registration
 Continental Breakfast

8:30 am Welcome and Introduction
 Michael Fasolka, Director, NIST Combinatorial Methods Center

Advances in C&HT Mechanical Properties

8:45 am Keynote Address:
 Oden Warren, *Hysitron, Inc*
 Nanoindentation screening of substrate-support libraries and polymer contact mechanics

9:30 am *Instrumented indentation of polymeric coatings and nanocomposites: great potential for combinatorial and high-throughput experimental design*
 Peter Votruba-Drzal, *BFRL NIST*

9:50 am *Structure-property characterization of gradient photopolymerizable dental materials*
 Sheng Lin-Gibson, *MSEL NIST*

10:10 am *Refreshment Break and Informal Discussions*

10:30 am *Measuring elastic properties on the nanoscale with SPM techniques*
 Donna Hurley, *MSEL NIST (Boulder)*

11:15 am *Gradient chemical micropatterns: a reference substrate for surface nanometrology*
 Duangrut Julthongpiput, *MSEL NIST*

11:35 am *Recent developments in our buckling-based metrology for thin film modulus*
 Shu Guo, *MSEL NIST*

11:55 am *Measuring the elastic modulus of soft materials via reverse buckling mechanics*
 Elizabeth Wilder, *MSEL NIST*

12:15 pm *Lunch* (NIST cafeteria, Bldg. 101)



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Monday, May 2nd, 2005 – Afternoon

Advances in C&HT Adhesion Platforms

- 1:30 pm Keynote Address:
Temperature and rate effects on adhesion and the potential for combinatorial testing
David Yarusso, 3M Company
- 2:15 pm *Combinatorial peel of pressure sensitive adhesives*
Patricia McGuiggan and Jim Filliben, MSEL NIST
- 2:35 pm *Peel of transdermal patches*
Stan Brown, FDA
- 2:55 pm *Refreshment Break and Informal Discussions*
- 3:15 pm Keynote Address:
Hot melt adhesives
Charles Paul, National Starch & Chemical Company
- 4:00 pm *Combinatorial approaches for characterizing interfacial adhesion*
Martin Chiang, MSEL NIST
- 4:20 pm *Combinatorial tools for depositing inorganic thin films*
Peter Schenck and Martin Green, MSEL NIST
- 4:40 pm *Surfaces formed during glass fracture*
J.-P. Guin and S.M. Wiederhorn, MSEL NIST
- 5:00 pm *Adjourn*
- 6:30 pm *Dinner (RSVP Required)*
TBD
Directions will be provided in the NCMC-7 Program Book



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Tuesday, May 3rd, 2005 – Morning

8:30 am Reconvene
 Continental Breakfast

NCMC Update Symposium

- 9:00 am *Introduction and NCMC Services*
 Michael Fasolka, Director, NIST Combinatorial Methods Center
- 9:10 am *Controlled radical polymerization on a chip*
 Tao Wu, MSEL NIST
- 9:30 am *Development of a microfluidic rheometer*
 Jai Pathak, MSEL NIST
- 9:50 am *Refreshment Break and Informal Discussions*
- 10:10 am *Combinatorial measurements of monomer conversion and polymer shrinkage on a microfluidic chip*
 Zuzanna Cygan, MSEL NIST
- 10:30 am *Preparation of colloidal assemblies by using an integrated microfluidic device.*
 Hua Hu, MSEL NIST
- 10:50 am *High-throughput synthesis and parallel dissolution evaluation of polyanhydrides for controlled drug delivery applications*
 Brandon Vogel, MSEL NIST
- 11:10 am *Combinatorial approach for measuring interfacial shear strength (IFSS) and failure initiation in composites*
 Jae Hyun Kim, MSEL NIST
- 11:30 am *Closing thoughts & discussion*
 Michael Fasolka, Patricia McGuiggan, Chris Stafford
- 12:00 pm *Lunch* (NIST cafeteria, Bldg. 101)

NCMC Tours, Demonstrations and Tutorials

- 1:30 pm *Convene in NCMC Labs – Building 224, Rm. B204*
 NCMC Open House and Discussions
- 3:00 pm *Adjourn – See you at NCMC-8!*